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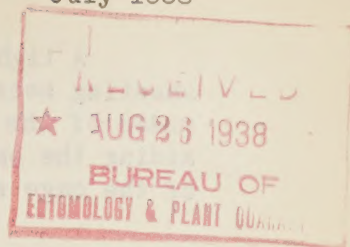
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MODIFICATIONS OF SQUARE-FOOT SAMPLER

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The sampler herein described makes possible relatively accurate counts of the insects on a unit basis whenever temperatures are high enough to allow activity. The equipment is a modification of that described by Hills¹ in 1933, which consisted of a cylindrical cage with a metal frame of two bands 13.56 inches in diameter (enclosing 1 square foot) connected by four 20-inch uprights. The bottom band was about $1\frac{3}{4}$ inches wide and sharpened on the bottom edge; while the top band was $\frac{3}{4}$ inch wide. The frame of the cage was covered by a good grade of sheeting and was mounted on a $4\frac{1}{2}$ -foot pitch-fork handle. The modifications made so that this equipment may be more conveniently and efficiently operated are the following:

The pitch-fork handle is replaced by a metal loop handle attached to the top and bottom bands (fig. 1). The handle resembles that used on tea or coffee pots and extends out approximately 6 inches from the top rim. Cloth and adhesive tape padding placed on the handle protect the hands of the operator. An additional $1/8$ -inch by $3/4$ -inch strap iron hoop is welded on the uprights midway between the top and bottom bands to increase sturdiness. The cloth covering is attached at the base to an additional 2-inch strip of light metal welded to the inside edge of the bottom band so that the cloth seldom comes into contact with the soil. When numerous samples are made in soft soil as found in sugar beet fields, the narrower bottom band is often buried and the cloth is gradually worn, making replacement necessary.

The sampler with these alterations has been in use for about 4 years in the study of the beet leafhopper populations in Utah. It is more easily manipulated and requires less energy than the old type because of the shorter lever.

¹/ Hills, O. A. A New Method for Collecting Samples of Insect Populations. Jour. Econ. Ent. 26: 906-910, illus. 1933.

A light-weight canvas covering is preferable to the bleached sheeting because the rough surface allows insects to adhere to the sides of the cage and gives increased protection from winds, thus aiding the operator. Adhesive tape may be used to reinforce edges of the cage which may otherwise become worn.



Figure 1.--Modified type of square-foot sampler.

